Project Title:

Sales and Customer Insight Dashboard

📁 Project Description

- Analysed retail sales data to identify sales trends, customer behaviour, and product performance.
- Used **SQL and Excel** to extract, filter, and prepare datasets for analysis.
- Performed **data cleaning and preprocessing in Python (Pandas, NumPy)** including handling missing values and duplicate records.
- Conducted **exploratory data analysis (EDA)** using Matplotlib and Seaborn to identify patterns and seasonality.
- Built an **interactive Power BI dashboard** to visualize key business metrics and insights.
- Presented insights to support data-driven decision making

🧰 Tools & Technologies

Python, **Pandas**, **NumPy**, **Matplotlib**, **Seaborn**, **SQL**, **Power BI**, **Excel**, **ARIMA**

Workflow: Sales Performance Analysis and Forecasting Dashboard

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🪜 Step 1: Data Collection

- Received structured sales data (customers, products, regions, dates, sales amount).
- Used **SQL queries** to extract relevant columns for analysis.
- Performed initial validation using Excel.

🖌️ Step 2: Data Cleaning & Preparation

- Handled missing values using appropriate techniques (mean/median).
- Removed duplicate records and corrected inconsistent values.
- Converted data types (date columns → datetime, sales → numeric).
- Created calculated fields such as **Profit, Discount %, Total Sales**.

🔍 Step 3: Exploratory Data Analysis (EDA)

- Analysed monthly and seasonal sales trends.
- Identified top-performing regions and product categories.
- Used visualizations to understand customer purchasing patterns.

📊 Step 4: Dashboard Development

- Designed an interactive dashboard with filters for **Region, Product Category, and Time Period**.

- Key visuals included:

  - Total Sales KPI
  - Monthly Sales Trend
  - Sales by Region
  - Product Category Performance

📜 Step 5: Insights & Reporting

- Identified regions with consistently high sales performance.
- Observed seasonal spikes in sales during festive months.
- Highlighted product categories contributing most to revenue.

🏁 Key Outcomes

- Reduced manual analysis effort using automated dashboards.
- Improved understanding of sales trends and customer behaviour.
- Enabled clear and simple reporting for decision-making.

The goal was to identify top-performing regions, product categories, and forecast future sales to improve decision-making.

Project Explanation

I worked on a Sales and Customer Insight Dashboard where I cleaned and analysed sales data using Python and SQL, and built an interactive Power BI dashboard to visualize trends, regions, and product performance.